CLAIMS:

I claim:

1. A method for displaying a magnetic field direction comprising:
    a. providing a magnetic field having a particular direction;
    b. locating a magneto-optical cell within the provided magnetic field;
    c. providing a source of light for transmission through the magneto-optical cell;
    d. measuring light transmission properties of the magneto-optical cell in relation to changes in the direction the provided magnetic field relative to the orientation of the magneto-optical cell.
2. The method as recited in claim 1 wherein the walls of the magneto-optical cell comprise one or more layers.
3. The method as recited in claim 2 wherein a cell wall has light transparency properties.
4. The method as recited in claim 2 wherein a cell wall has light reflecting properties.
5. The method as recited in claim 2 wherein a cell wall has light polarizing properties.
6. The method as recited in claim 2 wherein a cell wall has the property of anchoring a liquid crystal director.
7. The method as recited in claim 1 wherein the magneto-optical cell contains a magneto-optical material.

8. The method as recited in claim 7 wherein the magneto-optical material is a liquid crystal having dichroic (polarization dependent) light absorption properties.

9. The method as recited in claim 7 wherein the magneto-optical material comprises types of liquid crystal materials classified as smectic and nematic.

10. The method as recited in claim 9 wherein the magneto-optical material further includes properties of classes described as discotic and chiral.

11. The method as recited in claim 9 wherein the magneto-optical material further includes ferronematic materials.

12. The method as recited in claim 7 wherein measuring light transmission properties of the magneto-optical cell further includes the steps of:

    e. polarizing light entering the magneto-optical material in a first direction with a first polarizer;

    f. polarizing light transmitted by the magneto-optical material in a second direction with a second polarizer, wherein light transmitted by the second polarizer provides an observable bright field.

13. The method as recited in claim 7 wherein measuring light transmission properties of the magneto-optical cell further includes the steps of:

    e. polarizing light entering the magneto-optical material in a first direction with a first polarizer;

f. reflecting light transmitted by the magneto-optical material back through the magneto-optical material and first polarizer wherein reflected light transmitted provides an observable bright field.

14. The method according to claim 2 wherein the step of locating a magneto-optical cell within the provided magnetic field further includes the step of:

i. creating a display composed of one or more oriented pixel elements comprising at least one wall layer of the magneto-optical cell;

ii. orienting each pixel element within the display to control the light transmission properties of each pixel in accordance with the relative orientation of each pixel to the direction of the provided magnetic field.

15. The method according to claim 14 and further including the step of:

iii. orienting each pixel element within the display for providing at least one visual image relative to the coordinates of the display;

iv. successively varying the direction of the provided magnetic field relative to the orientation of the display for producing successive visual images.

16. The method according to claim 2 wherein the step of locating a magneto-optical cell within the provided magnetic field further includes the step of:

i. creating a display composed of one or more oriented pixel elements comprising at least one wall surface of the magneto-optical cell;

ii. orienting each pixel element within the display to control the light transmission properties of each pixel in accordance with the relative orientation of each pixel to the direction of the provided magnetic field.

17. The method according to claim 16 and further including the step of:

iii. orienting each pixel element within the display for providing at least one visual image relative to the coordinates of the display;

iv. successively varying the direction of the provided magnetic field relative to the orientation of the display for producing successive visual images.